



College of
Liberal Arts and Sciences
VILLANOVA
UNIVERSITY
Physics Department

University Physics Laboratory: Electricity & Magnetism (PHY 2413-003)

Spring 2013

Instructor: Dr. Joe Schick
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Instructor Availability and Office Hours

Monday, Wednesday, and Friday: 10:30 to 11:20

Tuesday: 12:00 to 12:50

If these times are inconvenient for you, please contact me for an appointment. I will check my email frequently during normal business hours and occasionally on evenings and weekends in order to answer any questions you may have. Please do not let time pass if you have a question about the course or subject, even if the question seems trivial to you.

Text

Laboratory Experiments in Physics, by Morgan Besson. It is the same book as used in PHY 2411.

Reports due Friday at noon

Each week by Friday at noon you should turn in a report that includes:

Purpose: a statement of the purpose of the experiment (on the cover page with your name and the date at the top),

Data & Graphs: all data and graphs generated in the session with proper labeling and captions explaining their meaning,

Sample calculations: samples of the important calculations with written explanations of their meanings, and

Conclusion: a concise discussion in which you explain how your data leads you to this result.

Reports may be submitted online through *Blackboard* or in paper form. Handwritten documents are not acceptable.

Keep in mind that if you make mistakes in your procedure *you will not have time to repeat the experiment*. Read the write-up in advance of the session and spend some time in the lab becoming familiar with the equipment and procedures to prevent this problem.

Grading

Your weekly reports will be graded on a 10 point scale with 7 points based on content and 3 points on style of presentation. Style includes organization, logical development, neatness, labeling and captioning, spelling, grammar, etc. Your final grade is computed from the average of the grades on your reports. A missing lab report will result in a final grade of *N* (incomplete). There is no final examination. Lateness of submission will result in a loss of points at the instructor's discretion.

Attendance

You are expected to attend all labs to receive a grade for the course. Consult with me if you must miss a lab as soon as possible.

Honesty

Villanova University has an Academic Integrity policy that will be enforced in this course. Any violation of this policy will result in failure of the course. *Collaboration on your lab reports is considered a violation*. Although you have a lab partner, you must turn in individual, independently written, reports.

Learning Support

It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability please contact your instructor after lab or during office hours and make arrangements to register with the Learning Support Office by contacting 610-519-5636 or at nancy.mott@villanova.edu as soon as possible. Registration is needed in order to receive accommodations.

Laboratory Schedule:

Jan 15	First lab meeting
Jan 29	Coulomb's Law and permittivity of free space
Feb 5	Equipotentials and electric field lines
Feb 12	Statically charged conductors
Feb 19	Resistance and resistivity
Feb 26	Equivalent resistance and Kirchhoff's rules
Mar 12	The heat dissipated in a resistor
Mar 19	The charge-to-mass ratio of the electron
Apr 2	The Biot-Savart Law and permeability of free space
Apr 9	The discharge of a capacitor
Apr 16	Low-pass and high-pass filters (AC circuits I)
Apr 23	Resonant circuit (AC circuits II)